**IRRATIONAL EQUATIONS**

* Irrational equations are equations where surds are involved.
* Solving irrational equations may involve rearranging before squaring each side.
* Once you have solutions, substitute the solution back into the original equation to check that the solutions hold. Some solutions may be eliminated in this step.

**Example 1:** Solve .

squaring both sides

rearrange to make a quadratic equation

solve the quadratic

or

For test the solution

For solution does not hold

Solution is .

**Example 2:** Solve .

squaring both sides

rearrange to make a quadratic equation

solve the quadratic

or

For test the solution

For solution does not hold

Solution is .

**Practice Questions:** Solve

1) 2)

3) 4)

5) 6)

**Solutions:**

1) or , but does not hold, so solution is .

2) or .

3) or , but does not hold, so solution is .

4)

5)

6)